

(UNIT-12)

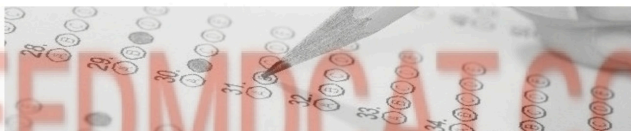
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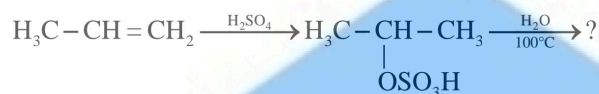
✓ **CHEMISTRY OF HYDROCARBONS**

- the following the compound that can be most readily su
- b. Phenol
d. Benzene



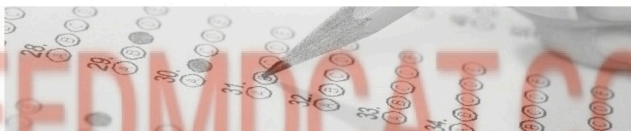
- a. Hydration of alkenes
b. Halogenation of alkenes
c. Hydrohalogenation of alkenes
d. Halogenation of alkanes

Q.11

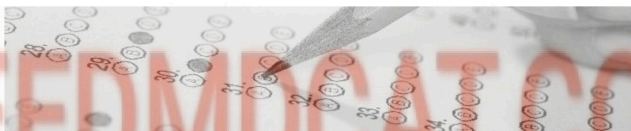


What is final product?

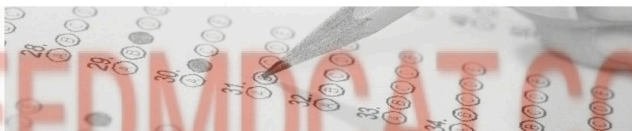
- a. Primary alcohol
b. Tertiary alcohol
c. Secondary alcohol
d. Secondary propyl hydrogen sulphonates
- Q.12 Alkenes cannot undergo which of the following reactions**
a. Electrophilic addition
b. Nucleophilic addition
c. Polymerization
d. Oxidation
- Q.13 Catalyst employed in polyethene formation is**
a. TiCl_4
b. $\text{TiCl}_4 + (\text{C}_2\text{H}_5)_3\text{Al}$
c. $\text{TiCl}_3 + (\text{C}_2\text{H}_5)_3\text{Al}$
d. $\text{TiCl}_4 + \text{AlCl}_3$
- Q.14 The products of oxidation of 2-butene with cold and hot KMnO_4 are**
a. Diol, diol
b. Diol, ketone
c. Diol, carboxylic acids
d. All are possible
- Q.15 Benzene is less reactive than**
a. Nitrobenzene
b. Alkene
c. Alkane
d. Benzaldehyde
- Q.16 Ozonides are unstable compounds and are reduced directly by treatment with Zn and H_2O , the reduction product**
a. Aldehyde
b. Alcohol
c. Ketone
d. May be aldehyde or ketone
- Q.17 2, 2-Dichloroethylsulphide is also known as**
a. Marsh gas
b. Water gas
c. Mustard gas
d. Natural gas
- Q.18 Markownikovs rule is not followed in reaction between**
a. Propene and Br_2
b. Propene and H_2SO_4
c. Propene and HCl
d. Propene and HCN
- Q.19 $1,1, 2,2\text{-tetrabromoethane} + \text{Zn} \longrightarrow \text{X} + \text{ZnBr}_2$**
 $\text{X} + \text{Zn} \longrightarrow \text{Y} + \text{ZnBr}_2$
What are "X" and "Y" in above reactions
a. X = Ethene, Y = Ethyne
b. X = 1,2-Dibromoethane, Y = Ethyne
c. X = Ethyne, Y = 1,2-Dibromoethene
d. X = 1,2-Dibromoethene, Y = Ethyne
- Q.20 Acetylene reacts with hydrogen gas in the presence of Ni. Initially an alkene is formed which then takes up another molecule of hydrogen to form _____**
a. Ethanol
b. Ethane
c. Vinyl alcohol
d. Acetaldehyde
- Q.21 Delocalized electron cloud in benzene is due to**
a. s electrons
b. sp^2 electrons
c. s and p electrons
d. p_z electrons
- Q.22 C-C bond length in benzene is**
a. 1.21 \AA
b. 1.34 \AA
c. 1.39 \AA
d. 1.54 \AA



- Q.23** Which of the following species are 3,5(meta) directing groups when second group is introduced into the benzene ring
I = $-\text{NH}_2$ II = $-\text{CHO}$ III = $-\text{COOH}$ IV = $-\text{CH}_3$
a. II, III and IV b. I and IV
c. II and III d. I, II and IV
- Q.24** Which statement is incorrect about benzene
a. Benzene is resonance stabilized
b. All carbons on benzene ring are identical
c. A weak electrophile can attack on benzene ring
d. It cannot decolorize KMnO_4 solution
- Q.25** $\text{HC} \equiv \text{CH} + \text{H}_2\text{O} \xrightarrow[\text{H}_2\text{SO}_4]{\text{HgSO}_4} \text{X} + \text{Y}$, What are "X" and "Y" in given reaction
a. X = Vinyl alcohol, Y = Ethyl alcohol b. X = Vinyl alcohol, Y = Acetone
c. X = Vinyl Alcohol, Y = Acetaldehyde d. X = Acetaldehyde, Y = Vinyl alcohol
- Q.26** For the formation of acetophenone from benzene which reagents are used
a. $\text{AlCl}_3 + \text{CH}_3\text{Cl}$ b. $\text{AlCl}_3 + \text{CHCl}_3$
c. $\text{AlCl}_3 + \text{CH}_3\text{CH}_2\text{COCl}$ d. $\text{AlCl}_3 + \text{CH}_3\text{COCl}$
- Q.27** Active nitrating agent in formation of nitrobenzene is
a. NO b. HNO_3
c. HNO_2 d. NO_2^+
- Q.28** Benzal chloride can be formed by reaction of chlorine with _____ in presence of sunlight
a. Benzene b. O nitrobenzene
c. Toluene d. Benzoic acid
- Q.29** Which product is formed in the given reaction
 $\text{C}_6\text{H}_6 + \text{CH}_3\text{-CH}_2\text{-Cl} \xrightarrow{\text{AlCl}_3} ?$
a. Aniline b. Isopropyl benzene
c. Toluene d. Ethyl benzene
- Q.30** Which of the following carbon atom of a terminal alkyne pulls the electrons more strongly making the attached hydrogen atom slightly acidic?
a. sp^3 -hybridized b. sp^2 -hybridized
c. sp -hybridized d. dsp^2 -hybridized
- Q.31** Under ordinary conditions alkanes are inert towards:
a. Acids b. Alkalies
c. Oxidizing agents d. All of these
- Q.32** Combustion of alkanes in limited supply of air produces
a. CO_2 and H_2O b. H_2O and CO
c. CO, CO_2 and H_2O d. CO, C and H_2O
- Q.33** Catalytic oxidation of alkane in the presence of Cu, $400^\circ\text{C}/200 \text{ atm}$, yield the product
a. Alcohol b. Ketone
c. Aldehyde d. Carboxylic acid
- Q.34** Which will react with methane at slowest rate
a. Fluorine b. Bromine
c. Iodine d. Chlorine
- Q.35** The reaction of benzene with bromine in the presence of FeBr_3 follows the mechanism of _____ reaction
a. Electrophilic addition b. Electrophilic substitution



- c. Nucleophilic substitution
d. Nucleophilic addition
- Q.36** Intermediate product formed when propanoyl chloride reacts with benzene is
- a. 
- b. 
- c. 
- d. 
- Q.37** Which one of the following acts as an electrophile in the electrophilic substitution of benzene with chlorine
- a. Cl^+
b. FeCl_4^-
c. Fe^{+3}
d. Cl^-
- Q.38** Toluene $+ 3[\text{O}] \xrightarrow{?}$ Benzoic acid $+ \text{H}_2\text{O}$, Which of the following reagents are used for given reaction
- a. $\text{LiAlH}_4, \text{H}_2\text{SO}_4$
b. NaOH, I_2
c. $\text{KMnO}_4, \text{H}_2\text{SO}_4$
d. $\text{HNO}_3, \text{H}_2\text{SO}_4$
- Q.39** Benzene is reduced to which compound at high temperature with hydrogen in the presence of Ni as a catalyst
- a. Phenol
b. Cyclopentane
c. Toluene
d. Cyclohexane
- Q.40** Which solvent is used for hydrogenation of benzene in the presence of Pt as a catalyst
- a. Water
b. Ether
c. Acetic acid
d. Ethanol
- Q.41** Nitration of nitrobenzene will yield
- a. 1,2 dinitrobenzene
b. 1,3 dinitrobenzene
c. 1,4 trinitrobenzene
d. All of these
- Q.42** Acylation of which one is easier
- a. Benzene
b. Nitrobenzene
c. Benzoic acid
d. Chlorobenzene
- Q.43** Which of the followings is ortho para directing group?
- a. $-\text{CCl}_3$
b. $-\text{NO}_2$
c. $-\text{NH}_2$
d. $-\text{CN}$
- Q.44** When toluene is treated with $\text{HNO}_3 + \text{H}_2\text{SO}_4$ at 100°C , the product will be
- a. Picric acid
b. 1,3-Dinitro benzene
c. 2,4,6-Trinitro toluene
d. Both A and B
- Q.45** When hydrogen atom is removed from toluene, group left is called?
- a. Alkyl Group
b. Phenyl Group
c. Benzyl Group
d. Methyl Group
- Q.46** Addition of unsymmetrical reagent to an unsymmetrical alkene is governed by
- a. Cannizzaro's reaction
b. Kolbe's reaction
c. Aldol reaction
d. Markownikov's rule
- Q.47** Alkene is mixed with oxygen or air and passed over Ag_2O catalyst at high temperature and pressure to form
- a. Alcohol
b. Aldehyde
c. Epoxide
d. Ozonide
- Q.48** Benzene cannot undergo
- a. Substitution reaction
b. Addition reaction
c. Oxidation reaction
d. Elimination reaction
- Q.49** The alkene on treatment with halogen in an inert solvent like Carbon tetrachloride at room temperature gives _____



- a. Alkyl halide
- b. Geminal dihalide
- c. Vicinal dihalide
- d. Vinyl halide

Q.50 Ethyl benzene + 6[O] $\xrightarrow[\text{H}_2\text{SO}_4]{\text{K}_2\text{Cr}_2\text{O}_7}$ X + Y + Z, What are X, Y and Z in given reaction

- a. X = Picric acid, Y = Water, Z = Carbon dioxide
- b. X = Benzoic acid, Y = Hydrogen, Z = Carbon dioxide
- c. X = Benzoic acid, Y = Water, Z = Carbon dioxide
- d. X = Phthalic acid, Y = Water, Z = Carbon dioxide

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Chem T-12

Chemistry # alkanes, alkenes, alkynes, Benzene

01- d	11- c	21- d	31- d	41- b
02- d	12- b	22- c	32- d	42- a
03- c	13- d B	23- c	33- d	43- c
04- d	14- c	24- c	34- c	44- c
05- c	15- b	25- c	35- b	45- c
06- c	16- d	26- d	36- d	46- d
07- a	17- c	27- d	37- a	47- c
08- c	18- a	28- c	38- c	48- d
09- b	19- d	29- d	39- d	49- c
10- b	20- b	30- c	40- c	50- c

ACK

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